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NEWS 7 Apr 22 BIOSIS Gene Names now available in TOXCENTER
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NEWS 9 Jun 03 New e-mail delivery for search results now available
NEWS 10 Jun 10 MEDLINE Reload
NEWS 11 Jun 10 PCTFULL has been reloaded
NEWS 12 Jul 02 FOREGE no longer contains STANDARDS file segment
NEWS 13 Jul 22 USAN to be reloaded July 28, 2002;
saved answer sets no longer valid
NEWS 14 Jul 29 Enhanced polymer searching in REGISTRY
NEWS 15 Jul 30 NETFIRST to be removed from STN
NEWS 16 Aug 08 CANCERLIT reload
NEWS 17 Aug 08 PHARMAMarketLetter(PHARMAML) - new on STN
NEWS 18 Aug 08 NTIS has been reloaded and enhanced
NEWS 19 Aug 09 JAPIO to be reloaded August 25, 2002
NEWS 20 Aug 19 Aquatic Toxicity Information Retrieval (AQUIRE)
now available on STN
NEWS 21 Aug 19 IFIPAT, IFICDB, and IFIUDB have been reloaded
NEWS 22 Aug 19 The MEDLINE file segment of TOXCENTER has been reloaded

NEWS EXPRESS February 1 CURRENT WINDOWS VERSION IS V6.0d,
CURRENT MACINTOSH VERSION IS V6.0a(ENG) AND V6.0Ja(JP),
AND CURRENT DISCOVER FILE IS DATED 05 FEBRUARY 2002

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COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.21	0.21

FILE 'REGISTRY' ENTERED AT 09:44:56 ON 21 AUG 2002
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 DICTIONARY FILE UPDATES: 19 AUG 2002 HIGHEST RN 444278-83-5

TSCA INFORMATION NOW CURRENT THROUGH MAY 20, 2002

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<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

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FULL ESTIMATED COST	0.38	0.59

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STRUCTURE FILE UPDATES: 19 AUG 2002 HIGHEST RN 444278-83-5
 DICTIONARY FILE UPDATES: 19 AUG 2002 HIGHEST RN 444278-83-5

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 for more information. See STNote 27, Searching Properties in the CAS
 Registry File, for complete details:
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=> e pyranose		
E1	7	PYRANOSAROSYL/BI
E2	431	PYRANOSATO/BI
E3	51096	--> PYRANOSE/BI
E4	1	PYRANOSELW/BI
E5	1	PYRANOSELWYN/BI
E6	1	PYRANOSELWYNONE/BI
E7	1	PYRANOSEN/BI
E8	3	PYRANOSI/BI
E9	12954	PYRANOSID/BI
E10	44	PYRANOSIDARIC/BI
E11	12	PYRANOSIDASE/BI
E12	2	PYRANOSIDATE/BI

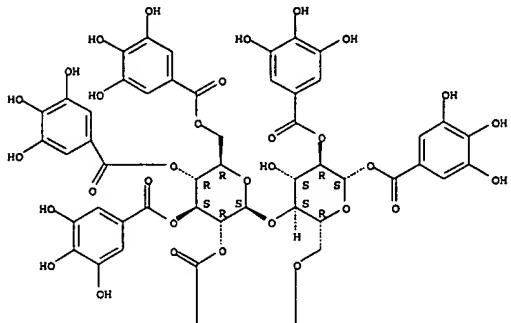
=> s e3
L1 51096 PYRANOSE/BI

=> d

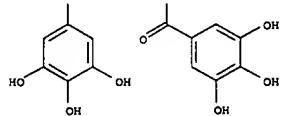
L1 ANSWER 1 OF 51096 REGISTRY COPYRIGHT 2002 ACS
 RN 443927-16-0 REGISTRY
 CN .beta.-D-Glucopyranose, 4-O-[2,3,4,6-tetrakis-O-(3,4,5-trihydroxybenzoyl)-beta.-D-glucopyranosyl]-, 1,3,6-tris(3,4,5-trihydroxybenzoyl) (9CI) (CA INDEX NAME)
 PS STEREOSEARCH
 MP C61 H50 O39
 SR CA
 LC STN Files: CAPLUS, TOXCENTER

Absolute stereochemistry.

PAGE 1-A



PAGE 2-A



1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

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=> s l1 and o/els
      16831736 O/ELS
L2      50982 L1 AND O/ELS

=> s l2 and c6/ele
'ELE' IS NOT A VALID FIELD CODE
      0 C6/ELE
L3      0 L2 AND C6/ELE
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COST IN U.S. DOLLARS	ENTRY	SESSION
FULL ESTIMATED COST	12.62	13.21

FILE 'MEDLINE' ENTERED AT 09:49:56 ON 21 AUG 2002

FILE 'CAPLUS' ENTERED AT 09:49:56 ON 21 AUG 2002
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FILE 'USPATFULL' ENTERED AT 09:49:56 ON 21 AUG 2002
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FILE 'EMBASE' ENTERED AT 09:49:56 ON 21 AUG 2002
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=> s (pyran? or ?pyran?)
L4      205663 (PYRAN? OR ?PYRAN?)
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=> s l4 and (radio(w)opa? or radionuclid? or radioisot? or radioactiv? or
radiolabel?)
L5      10213 L4 AND (RADIO(W) OPA? OR RADIONUCLID? OR RADIOISOT? OR RADIOACTI
V? OR RADIOLABEL?)
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=> s l5 and imag?
L6      2181 L5 AND IMAG?
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=> s l6 and radiat?
L7      875 L6 AND RADIAT?
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=> s l7 and (cell or cells)
3 FILES SEARCHED...
L8      794 L7 AND (CELL OR CELLS)
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=> s l8 and radio(w)opacif?
L9      4 L8 AND RADIO(W) OPACIF?
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PROCESSING COMPLETED FOR L9
L10      4 DUP REM L9 (0 DUPLICATES REMOVED)
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YOU HAVE REQUESTED DATA FROM 4 ANSWERS - CONTINUE? Y/ (N) :y
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L10 ANSWER 1 OF 4 USPATFULL

ACCESSION NUMBER: 2001:199582 USPATFULL
 TITLE: Radiographic assessment of tissue response to
 compounds
 INVENTOR(S): Salb, Jesse, Los Angeles, CA, United States

NUMBER	KIND	DATE
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PATENT INFORMATION: US 2001038682 A1 20011108
 APPLICATION INFO.: US 2001-810130 A1 20010315 (9)
 RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 1998-149734, filed on 8 Sep 1998, GRANTED, Pat. No. US 6226352

NUMBER	DATE
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PRIORITY INFORMATION: US 2000-190330P 20000316 (60)

DOCUMENT TYPE: Utility

FILE SEGMENT: APPLICATION

LEGAL REPRESENTATIVE: James C. Scheller, Jr., BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP, Seventh Floor, 12400 Wilshire Boulevard, Los Angeles, CA, 90025-1026

NUMBER OF CLAIMS: 95

EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 13 Drawing Page(s)

LINE COUNT: 2511

AB Radiographic system and method for noninvasively assessing the response of tissue to a compound, such as a therapeutic compound, in vivo. In one

embodiment, a non-radioactive, radio-opaque imaging agent accumulates in tissue in proportion to the tissue concentration of predefined cellular target. The imaging agent is administered to a live organism, and after an accumulation interval, radiographic images are acquired. The tissue being examined is transilluminated by X-ray beams with preselected different mean energy spectra, and a separate radiographic image is acquired during transillumination by each beam. An image processing system performs a weighted combination of the acquired images to produce a first image. The image processing procedure isolates the radiographic density contributed solely by differential tissue accumulation of the imaging agent. A compound is administered to the organism, and after a selected interval, a second radiographic image of the tissue is acquired. Radiographic density contributed by accumulated imaging agent in corresponding areas of tissue in the first and second images are compared. Differences in radiographic density between the images reflect changes in the concentration of the cellular target that have occurred after administration of the compound. The system and method may be used to assess therapeutic efficacy of compounds in the drug discovery process, in clinical trials, and in the evaluation of clinical treatment. In other embodiments, pharmacological and toxicological effects of a wide variety of compounds on tissue in vivo may be noninvasively assessed.

L10 ANSWER 2 OF 4 USPATFULL

ACCESSION NUMBER: 2001:181880 USPATFULL
 TITLE: Functional radiographic imaging methods and agents
 INVENTOR(S): Salb, Jesse, Los Angeles, CA, United States
 Cairns, Nicholas, Burlingame, CA, United States

NUMBER	KIND	DATE
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PATENT INFORMATION: US 2001031035 A1 20011018

APPLICATION INFO.: US 2001-809870 A1 20010315 (9)

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 1998-149734, filed on 8 Sep 1998, GRANTED, Pat. No. US 6226352

NUMBER	DATE
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PRIORITY INFORMATION: US 2000-190323P 20000316 (60)

DOCUMENT TYPE: Utility

FILE SEGMENT: APPLICATION

LEGAL REPRESENTATIVE: James C. Scheller, Jr., BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP, Seventh Floor, 12400 Wilshire Boulevard, Los Angeles, CA, 90025-1026

NUMBER OF CLAIMS: 49

EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 10 Drawing Page(s)

LINE COUNT: 2227

AB Systems and methods for radiographic imaging of tissue using a radio-opaque imaging agent that in one embodiment accumulates intracellularly in tissue in proportion to its functional, or physiological, activity. In one embodiment, the imaging agent is a cell membrane-permeable, radio-opaque, high affinity ligand for an intracellular target. The imaging agent is administered to a patient, and after an accumulation interval, radiographic images are acquired. The imaging agent preferentially accumulates in certain types of tissue and increases its radio-opacity. The tissue being examined is transilluminated by X-ray beams with preselected different mean energy spectra, and a separate radiographic image is acquired during transillumination by each beam. An image processing system may perform a weighted combination of the acquired images to produce a single displayed image. The system and method thus provides a functional image displayed with the anatomical detail and spatial resolution of a radiographic image. Functional and anatomical information are displayed in complete registration, facilitating localization of abnormal tissue in relation to nearby anatomical structures.

L10 ANSWER 3 OF 4 USPATFULL

ACCESSION NUMBER: 2001:88675 USPATFULL
 TITLE: System and method for radiographic imaging of tissue
 INVENTOR(S): Salb, Jesse, Los Angeles, CA, United States

NUMBER	KIND	DATE
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PATENT INFORMATION: US 2001001011 A1 20010510
 APPLICATION INFO.: US 2000-752619 A1 20001229 (9)
 RELATED APPLN. INFO.: Division of Ser. No. US 1998-149734, filed on 8 Sep 1998, PENDING

DOCUMENT TYPE: Utility

FILE SEGMENT: APPLICATION

LEGAL REPRESENTATIVE: James C. Scheller, JR., BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP, Seventh Floor, 12400 Wilshire Boulevard, Los Angeles, CA, 90025-1026

NUMBER OF CLAIMS: 86

EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 10 Drawing Page(s)

LINE COUNT: 2201

AB System and method for radiographic imaging of tissue using a non-radioactive, radio-opaque imaging agent that accumulates intracellularly in tissue in proportion to its functional, or physiological, activity. In one embodiment, the imaging agent is a cell membrane-permeable, radio-opaque, high affinity ligand for the intracellular enzyme hexokinase. The imaging agent is administered to a patient, and after an accumulation interval, radiographic images are acquired. The imaging agent preferentially accumulates in malignant tissue and increases its radio-opacity because of its elevated glucose metabolic rate relative to benign and normal tissue. The tissue being examined is transilluminated by X-ray beams with preselected different mean energy spectra, and a separate radiographic image is acquired during transillumination by each beam. An image processing system performs a weighted combination of the acquired images to produce a single displayed image. The image processing procedure isolates the radiographic density contributed solely by differential accumulation of the imaging agent in malignant, benign, and normal tissue. The system and method thus provides a functional image displayed with the anatomical detail and spatial resolution of a radiographic image. The viewer may interactively control the relative proportion of radiographic density contributed by imaging agent, soft tissue, and bone to the displayed image, allowing the display of functional and anatomical information in complete registration, and facilitating localization of malignant tissue in relation to nearby anatomical structures. In other embodiments, the system and method may be used to detect enzymes, nucleic acids, coenzymes, fatty acids, and other cellular targets in diagnostic imaging applications.

L10 ANSWER 4 OF 4 USPATFULL

ACCESSION NUMBER: 2001:64728 USPATFULL
 TITLE: System and method for radiographic imaging of tissue
 INVENTOR(S): Salb, Jesse, Los Angeles, CA, United States
 PATENT ASSIGNEE(S): Veritas Pharmaceuticals, Inc., Los Angeles, CA, United States (U.S. corporation)

NUMBER	KIND	DATE
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PATENT INFORMATION: US 6226352 B1 20010501
 APPLICATION INFO.: US 1998-149734 19980908 (9)

DOCUMENT TYPE: Utility

FILE SEGMENT: Granted

PRIMARY EXAMINER: Font, Frank G.

ASSISTANT EXAMINER: Rodriguez, Armando

LEGAL REPRESENTATIVE: Blakely, Sokoloff, Taylor & Zafman

NUMBER OF CLAIMS: 77

EXEMPLARY CLAIM: 16

NUMBER OF DRAWINGS: 14 Drawing Figure(s); 10 Drawing Page(s)

LINE COUNT: 2299

AB System and method for radiographic imaging of tissue using a non-radioactive, radio-opaque imaging agent that accumulates intracellularly in tissue in proportion to its functional, or physiological, activity. In one embodiment, the imaging agent is a cell membrane-permeable, radio-opaque, high affinity ligand for the intracellular enzyme hexokinase. The imaging agent is administered to a patient, and after an accumulation interval, radiographic images are acquired. The imaging agent preferentially accumulates in malignant tissue and increases its radio-opacity because of its elevated glucose metabolic rate relative to benign and normal tissue. The tissue being examined is transilluminated by X-ray beams with preselected different mean energy spectra, and a separate radiographic image is acquired during transillumination by each beam. An image processing system performs a weighted combination of the acquired images to produce a single displayed image. The image processing procedure isolates the radiographic density contributed solely by differential accumulation of the imaging agent in malignant, benign, and normal tissue. The system and method thus provides a functional image displayed with the anatomical detail and spatial resolution of a radiographic image. The viewer may interactively control the relative proportion of radiographic density contributed by imaging agent, soft tissue, and bone to the displayed image, allowing the display of functional and anatomical information in complete registration, and facilitating localization of malignant tissue in relation to nearby anatomical structures. In other embodiments, the system and method may be used to detect enzymes, nucleic acids, coenzymes, fatty acids, and other cellular targets in diagnostic imaging applications.

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=> sel rn
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FIELD CODE OR DATA NOT PRESENT IN ANSWERS SPECIFIED.

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=> sel l10/rn
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=> d l10 ibib ab str 1-
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ABS ----- AB

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RLI, PRAI, DT, FS, REP, REN, EXNAM, LREP, CLMN, ECL,
DRWN, AB, GOVI, PARN, SUMM, DRWD, DETD, CLM, INCL,
INCLM, INCLS, NCL, NCLM, NCLS, IC, ICM, ICS,
EXF, ARTU

ALLG ----- ALL plus PAGE.DRAW

BIB ----- AN, TI, IN, INA, PA, PAA, PAT, PI, AI, PTERM, DCD, RLI,
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09/752,619

Page 9

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EXF, ARTU, OS, CC, SX, ST, IT
ISTD ----- STD, indented with text labels
KWIC ----- All hit terms plus 20 words on either side
MAX ----- AN, TI, IN, INA, PA, PAA, PAT, PI, AI, PTERM, DCD,
RLI, PRAI, DT, FS, REP, REN, EXNAM, LREP, CLMN, ECL,
DRWN, AB, GOVI, PARN, SUMM, DRWD, DETD, CLM, INCL,
INCLM, INCLS, NCL, NCLM, NCLS, IC, ICM, ICS,
EXF, ARTU OS, CC, SX, ST, IT
MAX.EX ----- MAX for original and latest publication
OCC ----- List of display fields containing hit terms
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DT, FS, LN.CNT
SCAN ----- AN, TI, NCL, NCLM, NCLS, IC, ICM, ICS (random display
without answer number. SCAN must be entered on the
same line as DISPLAY, e.g., D SCAN)
STD ----- AN, TI, IN, INA, PA, PAA, PAT, PI, AI, RLI, PRAI,
DT, FS, LN.CNT, INCL, INCLM, INCLS, NCL, NCLM, NCLS,
IC, ICM, ICS, EXF (STD is the default)
STD.EX ----- STD for original and latest publication
TRIAL ----- AN, TI, INCL, INCLM, INCLS, NCL, NCLM, NCLS, IC,
ICM, ICS

ENTER DISPLAY FORMAT (STD):end

=> d 110 ibib ab hitstr 1-
YOU HAVE REQUESTED DATA FROM 4 ANSWERS - CONTINUE? Y/(N):y

L10 ANSWER 1 OF 4 USPATFULL

ACCESSION NUMBER: 2001:199582 USPATFULL
 TITLE: Radiographic assessment of tissue response to
 compounds
 INVENTOR(S): Salb, Jesse, Los Angeles, CA, United States

NUMBER	KIND	DATE
-----	-----	-----

PATENT INFORMATION: US 2001036682 A1 20011108
 APPLICATION INFO.: US 2001-810130 A1 20010315 (9)
 RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 1998-149734, filed
 on 8 Sep 1998, GRANTED, Pat. No. US 6226352

NUMBER	DATE
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PRIORITY INFORMATION: US 2000-190330P 20000316 (60)

DOCUMENT TYPE: Utility

FILE SEGMENT: APPLICATION

LEGAL REPRESENTATIVE: James C. Scheller, Jr., BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP, Seventh Floor, 12400 Wilshire Boulevard, Los Angeles, CA, 90025-1026

NUMBER OF CLAIMS: 95

EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 13 Drawing Page(s)

LINE COUNT: 2511

AB Radiographic system and method for noninvasively assessing the response of tissue to a compound, such as a therapeutic compound, in vivo. In

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embodiment, a non-radioactive, radio-opaque imaging agent accumulates in tissue in proportion to the tissue concentration of a predefined cellular target. The imaging agent is administered to a live organism, and after an accumulation interval, radiographic images are acquired. The tissue being examined is transilluminated by X-ray beams with preselected different mean energy spectra, and a separate radiographic image is acquired during transillumination by each beam. An image processing system performs a weighted combination of the acquired images to produce a first image. The image processing procedure isolates the radiographic density contributed solely by differential tissue accumulation of the imaging agent. A compound is administered to the organism, and after a selected interval, a second radiographic image of the tissue is acquired. Radiographic density contributed by accumulated imaging agent in corresponding areas of tissue in the first and second images are compared. Differences in radiographic density between the images reflect changes in the concentration of the cellular target that have occurred after administration of the compound. The system and method may be used to assess therapeutic efficacy of compounds in the drug discovery process, in clinical trials, and in the evaluation of clinical treatment. In other embodiments, pharmacological and toxicological effects of a wide variety of compounds on tissue in vivo may be noninvasively assessed.

L10 ANSWER 2 OF 4 USPATFULL

ACCESSION NUMBER: 2001:181860 USPATFULL
 TITLE: Functional radiographic imaging methods and
 agents
 INVENTOR(S): Salb, Jesse, Los Angeles, CA, United States
 Cairns, Nicholas, Burlingame, CA, United States

NUMBER	KIND	DATE
-----	-----	-----

PATENT INFORMATION: US 2001031035 A1 20011018

APPLICATION INFO.: US 2001-809870 A1 20010315 (9)

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 1998-149734, filed
 on 8 Sep 1998, GRANTED, Pat. No. US 6226352

NUMBER	DATE
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PRIORITY INFORMATION: US 2000-190323P 20000316 (60)

DOCUMENT TYPE: Utility

FILE SEGMENT: APPLICATION

LEGAL REPRESENTATIVE: James C. Scheller, Jr., BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP, Seventh Floor, 12400 Wilshire Boulevard, Los Angeles, CA, 90025-1026

NUMBER OF CLAIMS: 49

EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 10 Drawing Page(s)

LINE COUNT: 2227

AB Systems and methods for radiographic imaging of tissue using a radio-opaque imaging agent that in one embodiment accumulates intracellularly in tissue in proportion to its functional, or physiological, activity. In one embodiment, the imaging agent is a cell membrane-permeable, radio-opaque, high affinity ligand for an intracellular target. The imaging agent is administered to a patient, and after an accumulation interval, radiographic images are acquired. The imaging agent preferentially accumulates in certain types of tissue and increases its radio-opacity. The tissue being examined is transilluminated by X-ray beams with preselected different mean energy spectra, and a separate radiographic image is acquired during transillumination by each beam. An image processing system may perform a weighted combination of the acquired images to produce a single displayed image. The system and method thus provides a functional image displayed with the anatomical detail and spatial resolution of a radiographic image. Functional and anatomical information are displayed in complete registration, facilitating localization of abnormal tissue in relation to nearby anatomical structures.

L10 ANSWER 3 OF 4 USPATFULL

ACCESSION NUMBER: 2001:88875 USPATFULL
 TITLE: System and method for radiographic imaging of tissue
 INVENTOR(S): Salb, Jesse, Los Angeles, CA, United States

NUMBER	KIND	DATE
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PATENT INFORMATION: US 2001001011 A1 20010510
 APPLICATION INFO.: US 2000-752619 A1 20001229 (9)
 RELATED APPLN. INFO.: Division of Ser. No. US 1998-149734, filed on 8 Sep 1998, PENDING

DOCUMENT TYPE: Utility

FILE SEGMENT: APPLICATION

LEGAL REPRESENTATIVE: James C. Scheller, JR., BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP, Seventh Floor, 12400 Wilshire Boulevard, Los Angeles, CA, 90025-1026

NUMBER OF CLAIMS: 86

EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 10 Drawing Page(s)

LINE COUNT: 2201

AB System and method for radiographic imaging of tissue using a non-radioactive, radio-opaque imaging agent that accumulates intracellularly in tissue in proportion to its functional, or physiological, activity. In one embodiment, the imaging agent is a cell-membrane-permeable, radio-opaque, high affinity ligand for the intracellular enzyme hexokinase. The imaging agent is administered to a patient, and after an accumulation interval, radiographic images are acquired. The imaging agent preferentially accumulates in malignant tissue and increases its radio-opacity because of its elevated glucose metabolic rate relative to benign and normal tissue. The tissue being examined is transilluminated by X-ray beams with preselected different mean energy spectra, and a separate radiographic image is acquired during transillumination by each beam. An image processing system performs a weighted combination of the acquired images to produce a single displayed image. The image processing procedure isolates the radiographic density contributed solely by differential accumulation of the imaging agent in malignant, benign, and normal tissue. The system and method thus provides a functional image displayed with the anatomical detail and spatial resolution of a radiographic image. The viewer may interactively control the relative proportion of radiographic density contributed by imaging agent, soft tissue, and bone to the displayed image, allowing the display of functional and anatomical information in complete registration, and facilitating localization of malignant tissue in relation to nearby anatomical structures. In other embodiments, the system and method may be used to detect enzymes, nucleic acids, coenzymes, fatty acids, and other cellular targets in diagnostic imaging applications.

L10 ANSWER 4 OF 4 USPATFULL

ACCESSION NUMBER: 2001:64728 USPATFULL
 TITLE: System and method for radiographic imaging of tissue
 INVENTOR(S): Salb, Jesse, Los Angeles, CA, United States
 PATENT ASSIGNEE(S): Veritas Pharmaceuticals, Inc., Los Angeles, CA, United States (U.S. corporation)

NUMBER	KIND	DATE
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PATENT INFORMATION: US 6226352 B1 20010501
 APPLICATION INFO.: US 1998-149734 19980908 (9)

DOCUMENT TYPE: Utility

FILE SEGMENT: Granted

PRIMARY EXAMINER: Font, Frank G.

ASSISTANT EXAMINER: Rodriguez, Armando

LEGAL REPRESENTATIVE: Blakely, Sokoloff, Taylor & Zafman

NUMBER OF CLAIMS: 77

EXEMPLARY CLAIM: 16

NUMBER OF DRAWINGS: 14 Drawing Figure(s); 10 Drawing Page(s)

LINE COUNT: 2299

AB System and method for radiographic imaging of tissue using a non-radioactive, radio-opaque imaging agent that accumulates intracellularly in tissue in proportion to its functional, or physiological, activity. In one embodiment, the imaging agent is a cell-membrane-permeable, radio-opaque, high affinity ligand for the intracellular enzyme hexokinase. The imaging agent is administered to a patient, and after an accumulation interval, radiographic images are acquired. The imaging agent preferentially accumulates in malignant tissue and increases its radio-opacity because of its elevated glucose metabolic rate relative to benign and normal tissue. The tissue being examined is transilluminated by X-ray beams with preselected different mean energy spectra, and a separate radiographic image is acquired during transillumination by each beam. An image processing system performs a weighted combination of the acquired images to produce a single displayed image. The image processing procedure isolates the radiographic density contributed solely by differential accumulation of the imaging agent in malignant, benign, and normal tissue. The system and method thus provides a functional image displayed with the anatomical detail and spatial resolution of a radiographic image. The viewer may interactively control the relative proportion of radiographic

density contributed by imaging agent, soft tissue, and bone to the displayed image, allowing the display of functional and anatomical information in complete registration, and facilitating localization of malignant tissue in relation to nearby anatomical structures. In other embodiments, the system and method may be used to detect enzymes, nucleic acids, coenzymes, fatty acids, and other cellular targets in diagnostic imaging applications.